

CLEAN SET OF PENDING CLAIMS

Claim 1. A cleaning device comprising a shaped body made of porous polyvinyl acetal material having a uniform pore openings throughout the material with over 90% of the pore openings ranging from about 7 microns to about 40 microns in size .

Claim 2. A cleaning device as claimed in claim 1 wherein said device is a roller having a smooth outer surface.

Claim 3. A cleaning device as claimed in claim 1 wherein said device is a pad.

Claim 4. A cleaning device as claimed in claim 1 wherein said device is a disk.

Claim 5. A cleaning device as claimed in claim 1 wherein said polyvinyl acetal material has an average pore opening of about 20 microns.

Claim 6. A cleaning device as claimed in claim 1 wherein said material has about 95% of its pores openings below 40 microns.

Claim 7. A cleaning device comprising a body made of porous polyvinyl acetal material said polyvinyl material having a bubble point pressure of about 0.026 PSI.

Claim 8. A cleaning device as claimed in claim 2 wherein said roller has an outside diameter of about 60mm and an inside diameter of about 30mm with a thickness of about 15mm.

Claim 9. A cleaning device as claimed in claim 1 wherein said material has a mean flow pore pressure of about 0.33 PSI.

Claim 10 A semiconductor cleaning device comprising a body made of porous polyvinyl acetal material with a cylindrical roller shape and a smooth outer surface, said material having uniform gaseous formed pore size openings throughout with at least 90% of the pores ranging from about

7 microns to about 40 microns in size with a fluid flow through rate which does not distort the roller when fluid is passed through it to clean the same.

Claim 11. A semiconductor cleaning device as claimed in claim 10 wherein said polyvinyl acetal material has an average pore opening of about 20 microns.

Claim 12. A semiconductor cleaning device as claimed in claim 10 wherein said material has 95% of its pores with an opening size below 40 microns.

Claim 13. A semiconductor cleaning device comprising a shaped body made of porous polyvinyl acetal material with gas formed pores and having at least 95% of its pores with an opening size under 40 microns.

Claim 14. A semiconductor cleaning device as claimed in claim 10 wherein said roller is substantially skinless.

Claim 15. A semiconductor cleaning device as claimed in claim 10 wherein said material has a mean flow pore pressure of about 0.33 PSI.

Claim 16. A semiconductor cleaning device comprising a body made of porous polyvinyl acetal material having a uniform pore size throughout the material with at least 95% of the pores being less than 40 microns in opening size, said material having a mean flow pore opening of about 20 microns.

Claim 17. A semiconductor cleaning device as claimed in claim 16 wherein said material has a mean flow pressure of about 0.33PSI.

Claim 18. A semiconductor cleaning device comprising a substantially cylindrical roller body made of polyvinyl acetal with a smooth outer surface and uniform material porosity having a mean flow pore pressure of about 0.30 PSI with 90% of its pores ranging from 7 to 40 microns in

size and a wet flow rate using water as a medium ranging from about 7.0 L/min to 80.0 L/min, said pores forming substantially empty cavities.

Claim 19. A semiconductor cleaning device as claimed in claim 18 wherein cleaning solvent flow through said roller ranges from 120 - 180 ml/minute.

Claim 20. A semiconductor cleaning device comprising a substantially cylindrical roller body made of polyvinyl acetal with a smooth outer surface and uniform material porosity having a mean flow pore pressure of about 0.30 PSI with 90% of its pores ranging from 7 to 40 microns in size and a dry flow rate ranging from about 25.0 L/min to 95.0 L/min, said pores forming substantially empty cavities.

Claim 21. A semiconductor cleaning device as claimed in claim 18 wherein said roller body polyvinyl acetal material has less than 0.1 formaldehyde PPM

Claim 22. A cleaning device as claimed in claim 1 wherein said device is a roller.